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10/601,416	06/23/2003	Sanjay Agrawal	172033.01	7781

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EXAMINER	
GORTAYO, DANGELINO N	

ART UNIT	PAPER NUMBER
2168	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/601,416	AGRAWAL ET AL.	
	Examiner	Art Unit	
	Dangelino N. Gortayo	2168	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 24 September 2007.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-17,19-43,45-58 and 60-65 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-17,19-43,45-58 and 60-6 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/24/2007 has been entered.

Response to Amendment

2. In the amendment filed on 10/20/2006, claims 1, 27, 53, and 60 have been amended. The currently pending claims considered below are Claims 1-17,19-43,45-58 and 60-65.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 53-58 and 60-65 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims are directed to an

apparatus but recite no physical hardware to used to process and execute the claimed limitations, and is interpreted as software per se.

The claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material per se.

Descriptive material can be characterized as either "functional descriptive material" or "nonfunc-tional descriptive material." Both types of "descriptive material" are nonstatu-tory when claimed as descriptive material per se, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and func-tionally interrelated to the medium and will be statu-tory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994)

Merely claiming nonfunctional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See Diehr, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in Benson were unpatentable as abstract ideas because "[t]he sole practical application of the algorithm was in connection with the program-ming of a general purpose computer.").

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-4, 17, 19-20, 23-25, 27-30, 43, 45-46, 49-51, 53-55, 58, 60-62, and 65 are rejected under 35 U.S.C. 102(e) as being unpatentable over Aggarwal et al. ("Aggarwal" US # 6,922,700 B1) in view of Rao et al. ("Automating Physical Database Design in a Parallel Database"; Rao et al. 2002; Proceedings of the 2002 ACM SIGMOD International Conference on Management of Data. Pp. 558-569)

As per claim 1, Aggarwal teaches "For use with a database system having a workload comprising a set of queries that have been executed on the database, a method for selecting a set of partitioned physical database structures for access by the database system in executing queries" (see Abstract)

"compiling a pool of horizontally partitioned candidate structures" (column 3 lines 52-63, column 4 lines 24-43, column 5 lines 7-22, column 6 lines 36-43, wherein "building an inverted grid index, a correlation table" compiles possible candidate structures similar to a specific target and performs the same function, the partition based on dimensions, including a row value)

"for each query, determining potentially relevant structures and associating at least one horizontal partitioning method with each structure" (column 5 lines 7-22

wherein attribute fields are used to specify the partitions of the data points and is equivalent)

"selecting potentially relevant structures with associated partitioning methods to add to the pool of partitioned candidate structures" (column 7 line 65 – column 8 line 13 wherein the correlation table is used to run through the data to find potentially relevant data structures and performs similar functions)

"augmenting the pool of partitioned candidate structures by determining generalized partitioned structures that may be relevant over a set of queries in the workload and adding them to the pool of partitioned candidate structures," (column 4 lines 9-23 wherein a set of queries is received and a inverted grid index is built, containing an exemplary score table used to list possible candidate structures) "wherein determining generalized partitioned structures is performed by merging partitioned structures in the pool of partitioned candidate structures" (column 7 lines 30-64, wherein the possible structures are determined by building the inverted grid index one at a time through a counter)

"enumerating a set of horizontally partitioned physical structures from the pool of partitioned candidate structures" (column 9 line 54 – column 10 line 2 wherein an exemplary score table is used to list possible candidate structures)

<u>Aggarwal</u> does not teach determining partitioned structures is performed by merging the horizontal partitioning methods associated with the partitioned structures in the pool.

Rao teaches determining partitioned structures is performed by merging the horizontal partitioning methods associated with the partitioned structures in the pool. (Section 3 “Overview of Our Approach” page 2, 2nd paragraph to page 3 first paragraph; Section 5.2 “Evaluate Partitions”; Section 6 “Cost Estimation”, page 6 paragraph 6 to paragraph 10; Section 7.2 "Enumerating Algorithms"; Section 7.3 "Rank-based Enumeration", wherein a method of optimizing the partitioning of data involves evaluating and combining candidate partitions and the methods to find candidate partitions to find an optimized query plan).

It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Aggarwal's method of organizing a pool of partitioned candidate structures by building an index from possible structures with Rao's method of calculating and evaluating partitions and the workload for an optimized query plan. This gives the user the advantage of evaluating partitions through analysis of different partitions when analyzing a workload. The motivation for doing so would be to automate the process of partition selection that both suggests and compares possible partitions (page 1 paragraph 5)

As per claim 2, Aggarwal teaches “examining the workload to form a set of constraints on structures that may be added to the pool of partitioned candidate structures” (column 10 lines 3-18 wherein the scores from the score table can be used to form constraints on the similarity candidates and is analogous).

As per claim 3, Aggarwal teaches "the set of constraints is a set of column-subsets on which structures can be partitioned" (column 10 lines 34-48 wherein the score table contains coordinates that include column values, and is similar).

As per claim 4, Aggarwal teaches "the set of column-subsets is generated by evaluating a total cost of all queries in the workload that reference a given column-set and selecting column-sets that have a relatively high total cost of queries" (column 11 line 57 – column 12 line 10 wherein the score table is used to find similarity scores, which are used for comparison and performs the same function).

As per claim 17, Aggarwal teaches "selecting a set of potentially relevant structures that returns a lowest optimizer estimated cost for the query" (column 12 line 56 – column 13 line 7 wherein a count is kept to find the highest frequency, and the lowest costing optimizer, and is similar)

As per claim 19, Aggarwal teaches "recursively pair wise merging all the partitioned structures in the pool" (column 11 lines 43-56 wherein each entry in the inverted grid list within the inverted grid index is incremented and the score value is found, performing a similar step) "selecting a merged structure that provides a highest cost benefit with respect to the workload" (column 11 lines 49-56 wherein "a new entry is added to the score table" is an analogous step) "adding the selected merged structure to the set of partitioned candidate structures" (column 12 lines 11-18 wherein the correlation capture is completed to select the relevant data points, and is similar to the step outlined) "returning to the pair wise merging step" (column 12 lines 11-18 wherein the relevant candidate data is reported back as the search result, and is analogous).

As per claim 20, Aggarwal teaches "associating at least one partitioning method with each merged partitioned structure" (column 5 lines 46-58 wherein the equal range partitioning method is utilized for the data and is analogous).

As per claim 23, Aggarwal teaches "associating a partitioning method identical to one associated with another structure that is relevant to a query that the merged structure is relevant to" (column 5 lines 46-58 wherein the equal range partitioning method is chosen to build the grids, and is relevant to a query to user enters into the system, and is similar).

As per claim 24, Aggarwal teaches "a constraint that any potentially relevant structure must have a partitioning method associated with it that is identical to a partitioning method of the table that the structure references" (column 5 line 59 – column 6 line 3 wherein the partitioning method is chosen to be application dependant, and is an analogous constraint).

As per claim 25, Aggarwal teaches "the partitioning method associated with the merged partitioned structure is determined by selecting a range partition method based on one of the queries in the workload" (column 7 line 65 – column 8 line 13 wherein the data is shown with column type and an ordered sequence of values, and is used to examine the data, which is a similar step).

As per claim 27, this claim is rejected on grounds corresponding to the arguments given above for rejected claim 1 and is similarly rejected.

As per claims 28-30, these claims are rejected on grounds corresponding to the arguments given above for rejected claims 2-4 and are similarly rejected.

As per claims 43, this claim is rejected on grounds corresponding to the arguments given above for rejected claim 17 and is similarly rejected.

As per claims 45-46, these claims are rejected on grounds corresponding to the arguments given above for rejected claims 19-20 and are similarly rejected.

As per claims 49-51, these claims are rejected on grounds corresponding to the arguments given above for rejected claims 23-25 and are similarly rejected.

As per claim 53, Aggarwal teaches "For use with a database system having a workload comprising a set of queries that have been executed on the database, a method for selecting a set of partitioned physical database structures for access by the database system in executing queries" (see Abstract)

"a candidate accumulator that compiles a pool of horizontally partitioned candidate structures" (column 3 lines 52-63, column 4 lines 24-43, column 5 lines 7-22, column 6 lines 36-43, wherein "building an inverted grid index, a correlation table" compiles possible candidate structures similar to a specific target and performs the same function, the partition based on dimensions, including a row value)

"comprising: a structure partitioner that, for each query, determines potentially relevant structures and associates at least one horizontal partitioning method with each structure" (column 5 lines 7-22 wherein attribute fields are used to specify the partitions of the data points and is equivalent)

"a structure selector for selecting potentially relevant structures with associated horizontal partitioning methods to add to the pool of partitioned candidate structures"(column 7 line 65 – column 8 line 13 wherein the correlation table is used to run through the data to find potentially relevant data structures and performs similar functions)

"a structure constructor for augmenting the pool of partitioned candidate structures by determining generalized partitioned structures that may be relevant over a set of queries in the workload and adding them to the pool of partitioned candidate structures"(column 8 lines 49-59 wherein the inverted grid index and correlation table are utilized to identify similarity candidates and is analogous) "wherein determining generalized partitioned structures is performed by merging partitioned structures in the pool of partitioned candidate structures" (column 7 lines 30-64, wherein the possible structures are determined by building the inverted grid index one at a time through a counter)

"a candidate set enumerator for enumerating a set of horizontally partitioned physical structures from the pool of partitioned candidate structures"(column 9 line 54 – column 10 line 2 wherein an exemplary score table is used to list possible candidate structures and is similar).

Aggarwal does not teach determining partitioned structures is performed by merging the horizontal partitioning methods associated with the partitioned structures in the pool.

Rao teaches determining partitioned structures is performed by merging the horizontal partitioning methods associated with the partitioned structures in the pool. (Section 3 "Overview of Our Approach" page 2, 2nd paragraph to page 3 first paragraph; Section 5.2 "Evaluate Partitions"; Section 6 "Cost Estimation", page 6 paragraph 6 to paragraph 10; Section 7.2 "Enumerating Algorithms"; Section 7.3 "Rank-based Enumeration", wherein a method of optimizing the partitioning of data involves evaluating and combining candidate partitions and the methods to find candidate partitions to find an optimized query plan).

It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Aggarwal's method of organizing a pool of partitioned candidate structures by building an index from possible structures with Rao's method of calculating and evaluating partitions and the workload for an optimized query plan. This gives the user the advantage of evaluating partitions through analysis of different partitions when analyzing a workload. The motivation for doing so would be to automate the process of partition selection that both suggests and compares possible partitions (page 1 paragraph 5)

As per claim 54, Aggarwal teaches "examining the workload to form a set of constraints on structures that may be added to the pool of partitioned candidate structures"(column 10 lines 34-48 wherein the score table contains coordinates that include column values, and is similar).

As per claim 55, Aggarwal teaches "the set of constraints is a set of column-subsets on which structures can be partitioned" (column 10 lines 34-48 wherein the score table contains coordinates that include column values, and is similar).

As per claim 58, Aggarwal teaches "selects potentially relevant structures with associated partitioning methods by selecting a set of potentially relevant structures that returns a lowest optimizer estimated cost for the query"(column 12 line 56 – column 13 line 7 wherein a count is kept to find the highest frequency, and the lowest costing optimizer, and is similar)

As per claim 60, this claim is rejected on grounds corresponding to the arguments given above for rejected claim 53 and is similarly rejected.

As per claim 61-62, these claims are rejected on grounds corresponding to the arguments given above for rejected claims 54-55 and are similarly rejected.

As per claim 65, this claim is rejected on grounds corresponding to the arguments given above for rejected claim 58 and is similarly rejected.

7. Claims 5-6, 21-22, 31-32, 47-48, 56, and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aggarwal et al. ("Aggarwal" US # 6,922,700 B1) and Rao et al. ("Automating Physical Database Design in a Parallel Database"; Rao et al. 2002; Proceedings of the 2002 ACM SIGMOD International Conference on Management of Data. Pp. 558-569) and further in view of Wang ("Wang" US # 5,758,345).

As per claims 5 and 6, Aggarwal teaches "evaluating the query" (column 3 lines 60-64). Aggarwal does not expressly disclose "associating a range partitioning method with the potentially relevant structure if the query comprises a range selection predicate on a single column. The range partitioning method is specified as the single column in the range selection predicate and an ordered sequence of all boundary values of ranges over the single column". Wang discloses "associating a range partitioning method with the potentially relevant structure if the query comprises a range selection predicate on a single column. The range partitioning method is specified as the single column in the range selection predicate and an ordered sequence of all boundary values of ranges over the single column" (column 8 lines 16-20 and column 14 lines 51-58 wherein range partitioning is used to allocate the data in the data space and is analogous). It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Aggarwal's method of finding candidate structures for data with Wang's use of range partitioning to establish physical database layout. This gives users the advantage of being able to use range partitioning when judging candidate structures. The motivation for doing so would be to optimize the design of a physical database layout.

As per claim 21, Aggarwal does not explicitly disclose "the partitioned candidate structures being merged all have range partitioning methods" Wang discloses "the partitioned candidate structures being merged all have range partitioning methods" (column 8 lines 16-20 and column 13 lines 8-21 wherein two documents are merged to find similarities). It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Aggarwal's method of finding candidate structures for

data with Wang's use of range partitioning to establish physical database layout. This gives users the advantage of being able to use range partitioning when judging candidate structures. The motivation for doing so would be to optimize the design of a physical database layout.

As per claim 22, Aggarwal discloses "the cost of evaluating all queries is computed by: estimating a cost of scanning a subset of partitions required to answer each query based on a size of partitions being scanned and assigning a fixed cost for accessing any partition in answering the query to accumulate a total cost for each query" (column 8 lines 33-48 wherein the correlation table is used to evaluate the query cost, and if it meets the correlation threshold, disclosing an analogous step).

As per claims 31-32, these claims are rejected on grounds corresponding to the arguments given above for rejected claims 5-6 and are similarly rejected.

As per claims 47-48, these claims are rejected on grounds corresponding to the arguments given above for rejected claims 21-22 and are similarly rejected.

As per claim 56, Aggarwal teaches "associates at least one partitioning method with each potentially relevant structure" (column 3 lines 60-64). Aggarwal does not expressly disclose "associating a range partitioning method with the potentially relevant structure". Wang discloses "associating a range partitioning method with the potentially relevant structure" (column 8 lines 16-20 and column 14 lines 51-58 wherein range partitioning is used to allocate the data in the data space and is analogous). It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Aggarwal's method of finding candidate structures for data with Wang's use of

range partitioning to establish physical database layout. This gives users the advantage of being able to use range partitioning when judging candidate structures. The motivation for doing so would be to optimize the design of a physical database layout.

As per claims 63, this claim is rejected on grounds corresponding to the arguments given above for rejected claim 56 and is similarly rejected.

8. Claims 7-16, 26, 33-42, 52, 57, and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aggarwal et al. ("Aggarwal" US # 6,922,700 B1) and Rao et al. ("Automating Physical Database Design in a Parallel Database"; Rao et al. 2002; Proceedings of the 2002 ACM SIGMOD International Conference on Management of Data. Pp. 558-569) and further in view of Pederson et al. ("Pederson" US # 5,864,842).

As per claim 7-8, Aggarwal discloses "associating at least one partitioning method with each potentially relevant structure" (column 5 lines 7-22 wherein attribute fields are used to specify the partitions of the data points and is equivalent). Aggarwal does not explicitly disclose "associating a hash partitioning method with the potentially relevant structure... specified by a set of column types and a number of partitions". Pederson discloses "associating a hash partitioning method with the potentially relevant structure... specified by a set of column types and a number of partitions" (Figure 6A and column 8 lines 11-55 wherein hash partitioning is used to partition a table and is analogous). It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Aggarwal's method of finding candidate structures for data with Pederson's use of hash partitioning to partition candidate structures. This gives

users the advantage of being able to use hash partitioning when judging candidate structures. The motivation for doing so would be to optimize queries for determining relevant structures.

As per claim 9, Aggarwal discloses "the number of partitions is calculated by iteratively evaluating the cost of executing the query with numbers of partitions that range between upper and lower partition number limits and selecting the number of partitions that has the lowest cost" (column 5 lines 31-45 wherein the number of grids represents partitions and is determined by cost, and is an analogous step).

As per claim 10, Aggarwal discloses "the upper limit is a number of distinct values in a column-subset being partitioned" (column 5 lines 31-45 where N is the number of index points and is similar).

As per claim 11-12, Aggarwal discloses "the lower limit is a number of processors in the database system" (column 5 lines 31-45 where k is the number of grids stemming from data from various sources and is analogous) "the lower limit is one" (column 5 lines 31-45 where k is the denominator and is at least 1 to be valid).

As per claim 13, Aggarwal discloses "rejecting any number of partitions that results in a partition that exceeds an amount of available memory"(column 5 lines 31-45 where the number of partitions cannot exceed the total number of index points and performs the same step).

As per claim 14, Aggarwal discloses "rejecting any number of partitions that results in a number of partitions that exceeds a preset partition number limit" (column 5

lines 31-45 where the number of partitions cannot exceed the total number of index points and performs the same step).

As per claim 15, Pederson discloses "a plurality of potentially relevant structures are joined for the query and wherein the hash partitioning method associated with each of the potentially relevant structures comprises an identical number of partitions" (column 6 lines 23-61 wherein the hash partitioning is performed to join relevant structures in response to the query and is a similar step).

As per claim 16, Aggarwal discloses "the upper partition number limit is the minimum of the following values: the maximum number of distinct values in one of the plurality of potentially relevant structures, the combined size of the plurality of potentially relevant structures divided by available memory, or a maximum number of partitions allowed by the database system" (column 5 lines 31-45 wherein the number of distinct values acts as the upper partition limit and is analogous).

As per claim 26, Aggarwal teaches "determining a minimum number of partitions that results in a partition size less than or equal to an amount of memory allocated for partition storage" (column 4 lines 43-51 wherein the second attribute field determines the size of the partition based on memory available and is analogous).

As per claims 33-42, these claims are rejected on grounds corresponding to the arguments given above for rejected claims 7-16 and are similarly rejected.

As per claim 52, this claim is rejected on grounds corresponding to the arguments given above for rejected claim 26 and is similarly rejected.

As per claim 57, Aggarwal discloses "structure partitioner associates at least one partitioning method with each potentially relevant structure" (column 5 lines 7-22 wherein attribute fields are used to specify the partitions of the data points and is equivalent). Aggarwal does not disclose "associating a hash partitioning method with the potentially relevant structure". Pederson discloses "associating a hash partitioning method with the potentially relevant structure" (Figure 6A and column 8 lines 11-55 wherein hash partitioning is used to partition a table and is analogous). It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Aggarwal's method of finding candidate structures for data with Pederson's use of hash partitioning to partition candidate structures. This gives users the advantage of being able to use hash partitioning when judging candidate structures. . The motivation for doing so would be to optimize queries for determining relevant structures.

As per claims 64, this claim is rejected on grounds corresponding to the arguments given above for rejected claim 57 and is similarly rejected.

Response to Arguments

9. Applicant's arguments with respect to claims 1-17, 19-43, 45-58, and 60-65 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dangelino N. Gortayo whose telephone number is (571)272-7204. The examiner can normally be reached on M-F 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim T. Vo can be reached on (571)272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dangelino N. Gortayo
Examiner

Tim Vo
SPE

TIM VO
SUPERVISORY PATENT EXAMINER
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